



Volume 24 | Issue 2 | December 1, 2019

ENTOMOLOGICAL SOCIETY OF ONTARIO

FALL NEWSLETTER



Photo:
Yvonne Metcalfe

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Greetings All!

First and foremost – a big thank you to David Beresford, the past present of the ESO. David helped organize a wonderful AGM at Bark Lake in Early November; thank you for your leadership! I would also like to thank Antonia Guidotti, who is leaving the ESO board this year after serving a three-year term as president-elect, president and past president of the ESO. She and ESO Secretary Michelle Locke put in a lot of time to help re-draft the society's constitution and by-laws. Please remember to vote on the changes when Michelle puts out a call! I would also like to welcome newly elected members of the ESO board and our new president-elect, Dr. Amanda Roe. We look forward to your involvement and leadership.

My first few weeks as ESO president have been productive. In collaborating with ESO Director, Miriam Richards, we are developing plans for hosting the 2021 ESC/ESO JAM. After an initial hiccup, we are on our way to secure a wonderful venue for our meeting in beautiful Niagara Falls. I think external communication is going to be key in enhancing the future growth of the society. To that end, I helped recruit an enthusiastic group of students along with a professional science communicator who will serve on the ESO's inaugural communication committee. The committee will be tasked with generating 'buzz' about the society, its activities, and its membership on social media.

Ontario and Canada will need a strong core of entomologists to solve increasing complex problems caused by climate change, invasive species, habitat loss, and decline in beneficial insects such as bees. One of the brightest notes of our last AGM was the large number of passionate graduate students that presented impressive research on a diversity of topics and taxa. So, while we live in challenging times, I am confident that the ESO, with its impressive cohort of junior entomologists, are up to the task!

- Amro Zayed



ESO Presidential Cockroach visits honey bee colony to learn about alternative governance system



Amanda Roe

President-elect

I have always loved insects. Instead of dolls I had a bucket of “squirmyies”; my prized possession. My two young daughters have inherited this first collection as well as my passion for bugs, nature, and dirty hands. I grew up on a farm in southern Alberta and only recently moved to Ontario six years ago. While I have always loved bugs I did not fully recognize my passion for insects until I started my insect collection for my Insect Taxonomy course at the University of Alberta. Following my undergraduate degree in Environmental Biology, I completed my PhD with Dr. Felix Sperling at the University of Alberta in 2006. My PhD thesis focused on the molecular ecology of a group of cone and seed pests called coneworms (Lepidoptera: Pyralidae: *Dioryctria*). Since flexibility is paramount as a postdoc, I worked in a wide diversity of systems - three Kingdoms in fact. I have studied higher level systematics in Lepidoptera at the University of Minnesota (2006-2007, NSF AToL project), mountain pine beetle fungal symbionts at the University of Alberta (2008 – 2010, Genome Canada TRIA project), and popular tree hybridization with the Canadian Forest Service (2010-2013).

Insects, though, are really my true love. Luckily my persistence paid off and I have now been work in the Pest Management Division at the Great Lakes Forestry Centre with the Canadian Forest Service (NRCan) since 2016. I have developed a molecular ecology program which focuses on the genomic and functional diversity of key forest pests, including the spruce budworm, Asian longhorned beetle, and forest tent caterpillar. In addition to this broad research program I am also the scientific lead of the Insect Production and Quarantine Laboratory within our centre. This is a world-class insect rearing facility that produces insects and diet for the global research community.

Education and public outreach have always been an important component of my professional life. I volunteered as an outreach educator at the University of Alberta, bringing bugs into classrooms throughout Alberta. My passion for outreach led me to help found Entomica, an award winning insectarium in Sault Ste. Marie. One of our innovative outreach programs called Science for Seniors received national recognition from the Canadian Association of Science Centres. Building a knowledgeable, scientifically literate public is critical in society. I value the work that the ESO does to share the world of insects (and spiders too!) to the general public. There is nothing more enjoyable than sharing my buggy knowledge with a group of engaged students or seniors. I live for those ‘wow’ moments, when I can share a piece of my passion with someone new. I will be honoured to serve the ESO as president. I will help grow our society by recruiting new members and spreading our collective entomological passion.



Meredith Miller

Director

Meredith Miller has always had a keen interest in entomology and has really enjoyed assisting research in a diverse range of insect-related fields. During her summers of her environmental science undergraduate degree, she worked as a field technician collecting and identifying aquatic macroinvertebrates as part of environmental monitoring programming at Quinte Conservation in Belleville Ontario. She graduated from the Bio-Resource Management (honours) program from the University of Guelph in 2012.

Meredith completed a Masters of Science in entomology (Environmental Science) at the University of Guelph with Dr. Steve Marshall in 2015. Her Masters focused on the taxonomy of *Drosophila* found in Northeastern North America, and included a photographic identification key to species published in CJA. During her Masters, she had the opportunity to work in the Diptera Unit at the Canadian National Collection of Insects with Dr. Jeff Skevington, visit the American Museum of Natural History to work with Dave Grimaldi, and present her research at local (ESO and ESC) and international conferences (ICD).

After completing her Masters, she worked as a database technician in the Diptera Unit at the CNC, followed by a field technician position in integrated pest management for Dr. Cynthia Scott Dupree at the University of Guelph. She also held a volunteer position working at the Cambridge Butterfly conservatory, where she worked as part of the team that managed and maintained live invertebrate colonies for public display. In 2017, Meredith became a collections technician at the Centre for Biodiversity Genomics at the University of Guelph. One of her primary tasks includes coordinating and implementing tri-annual trips to the Smithsonian National Museum of Natural History, working closely with curators and museum staff to select appropriate specimens for CO1 sequencing, thus helping to expand the current BOLD Barcode library.

Meredith loves to be a part of in the entomological community and intends to assist with entomology research and continue her own taxonomic work into the future.



Ziggy Kullik

Director

I have been interested in insects since I was a child, but really got passionate about the topic as an undergraduate student at Trent University. My subsequent graduate studies at the University of Guelph focused on the phenology and integrated pest management of the black cutworm. During my time in Guelph I developed a particularly keen interest in soil invertebrates and decomposition ecology which I pursued as a postdoctoral researcher. In 2010 I joined Health Canada to develop tools and regulations to assess potential environmental impacts of human and veterinary drug products on soil and aquatic ecosystems. I now work for the Canadian Food Inspection Agency, where I am engaged in evaluating a wide variety of programs, including those aimed at ensuring Canada's animal and plant resource base is safe from invasive pest species and pathogens.

I first joined the Entomological Society of Ontario as a graduate student in 2001 and have been an active member ever since. As a graduate student I benefited greatly from participating in annual meetings. Particularly striking was the welcoming and supportive atmosphere and the opportunities to interact with the ESO's committed and active membership. I have since been involved in organizing several annual meetings in various roles, including local arrangements and program committee, meeting co-chair and deputy chair and have also served as an ESO director in the past. I am very happy to once again serve as a member of the ESO board.



Aleksandra Dolezal

Student representative

Since childhood I have been interested in entomology and my whole life has been a means to pursue a career in it. I am currently a master's student with Andrew MacDougall at the University of Guelph, and will be continuing to a Ph.D. in the same lab. I investigate how habitats in agricultural landscapes affect arthropods and provide ecosystem services on farms. I believe that understanding, protecting, and harnessing arthropod biodiversity is key to the agricultural and food challenge before us.

Not only am I involved in entomological research at the U of G, but also in entomology-related outreach. I initiated the first entomology club at U of G in winter 2018. For my club duties as president, I presented a series of insect identification workshops targeted for beginner entomologists, organized lightning talks for graduate students to present their research, and planned insect field trips. Other duties included providing networking, volunteer, and employment opportunities for undergraduates interested in entomology. Apart from this club, I have been involved

In planning Guelph Bug Day for two years in a row. I have also been involved in Entomology Societies, serving on the Student Affairs Committee (North Central Branch) of the Entomological Society of America (ESA) and as the chair-elect for the Entomological Society of America (North Central Branch). With these leadership and outreach roles you can tell scientific communication is something I am very passionate about.

I believe that a scientist's most important skill is their ability to communicate their ideas to others including the public. To help communicate science to a more public audience I took an active role as a journalist for the website envirobites.org where I disseminate cutting edge environmental science research to the public in a way they can get excited about. The topics include entomology related issues but extend to broader issues such as conservation and climate change. I have also been curating my own research blog since 2016 at ecologyforlifeblog.wordpress.com.

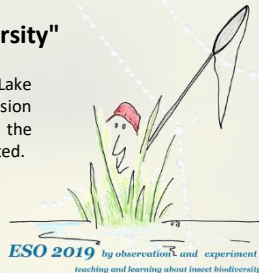
As ESO Student Representative I will focus on scientific communication activities. I also want undergraduate students to get a head start in non-referred publications and get them to write for the ESO newsletter. I want to provide students with opportunities to share their research and also foster their passion for insect biodiversity.

"By observation and experiment: teaching and learning about insect biodiversity"

This was the theme for the 156th Annual Conference of the ESO held on November 1-3 at the Bark Lake Conference Centre in Irondale (near Haliburton) this year, which had 65 attendees. The Friday night session opened with an informal identification quiz based on pictures of insects assembled by Martin Parker of the Peterborough Field Naturalists. There were disputed identifications (I still insist they were tabanids), as expected.



Photo: Antonia Guidotti



Saturday morning we were very fortunate to have David LeGros as our plenary speaker. He is the Senior Park Naturalist for Algonquin Provincial Park and comes from an extensive background in teaching the public about conservation. He spoke about the importance of learning natural history by spending time outdoors and looking for insects, making sure we actively pursue field studies as well as scientific research. He stressed the urgent conservation need to share this approach with others, instilling them with the same love of wildlife each of us has. His talk was a welcome and timely reminder of why most of us began studying entomology in the first place. Saturday night's keynote speaker was Dr. Yves Alarie, a professor in the Department of Biology at Laurentian University. He provided us with a brilliant exposition of his work on Hydradephaga systematics and larval morphology. The talk was scientifically informative, as well as being an entertaining tour of his journey into this field of study. It was an amazing insight into an important body of work

Financially, the conference essentially broke even, showing a modest profit of \$42.24, largely due to our corporate sponsors who donated \$2,010.79 (which was much appreciated and without whom we could not have had such a successful conference!). We encourage all our members to support our sponsors: Syngenta (\$500), BASF Canada (\$500), BioQuip (\$323.79), Atelier Jean Paquet (\$250), OFAH Zone J (\$100), D2 Health Solutions Inc. (\$150), Trent Biology Department (\$100), and Kawartha Country Wines in kind (speaker gifts \$87).

I must mention the outstanding service and staff of the Bark Lake Conference Centre. Chef Micheline Kulak produced a fun rendering of the conference logo onto the chalk menu board and decorated the food area with a massive spider covered in lights. Food was served by the staff wearing black fly veils (appreciated by those of us who study biting flies!). This keen sense of humour and entering into the fun of the event was delightful! The program facilitators Lucia Demarco and Rachelle Litt, with help from their colleague Victoria Chondon, made everything run smoothly. Angie Grant, the Special Events Coordinator, guided us through the entire organizational process and her help made the organizing seem effortless. And, of course, all the staff, rooms, and meals, were outstanding.

The conference was organized by Kaitlyn Fleming, Sarah Langer, Ayden Ricker-Held (who also ran a fishing demonstration Saturday afternoon), David Beresford, with help from Kathryn Vezsenyi, Donald Bourne, Emily Vassiliadis of the Trent University Advancement Office, and many others. On behalf of the ESO, I want to thank the organizers for doing such a good job. I also want to point out that all those who attended the conference made it a success.

- David Beresford



Photo: Antonia Guidotti



ESO Travel Award Winners:

Tanushree Tiwari, Kate Lindsay, Tiffany Yau, Noor Taji

TRAVEL AWARDS

Tanushree Tiwari

POSTER PRESENTATION:

Identifying genetic markers for deformed wing virus (DWV) levels in Honey Bees

Kate Lindsay

POSTER PRESENTATION:

Scipopus: *Finding a satisfying generic concept*

Tiffany Yau

ORAL PRESENTATION:

Stipulosina, a new genus of Limosininae (Diptera: Sphaeroceridae) associated with bamboo stipules in Ecuador

Noor Taji

POSTER COAUTHOR:

Activity and thermal tolerance of five sympatric species of Ontario ants



ESO President's Prize Winners:

Amanda Semenuk, Cassandra Russell, Kurtis Turnbull, Jackie Lebenzon

PRESIDENT'S PRIZE: POSTER

Cassandra Russell

*Improved trapping for detection and monitoring of pepper weevil (*Anthonomus eugenii*)*

Kurtis Turnbull

Unearthing the adaptive significance of soil chambers built by insects

Honourable mention: **Albert Tomchyshyn**

PRESIDENT'S PRIZE: ORAL

Amanda Semenuk

Carnivorous plants and bog arthropods: diversity and trophic level

Jackie Lebenzon

*Beetle, it's cold outside: The metabolomic and transcriptomic changes that drive cold tolerance in the Colorado potato beetle (*Leptinotarsa decemlineata*)*

2020 Joint Meeting: OPMC, OWC, ESO, & SORA-CPS

Insects, Plant Diseases and Weeds: Facing the Future Together

London, Ontario. November 5-7, 2020

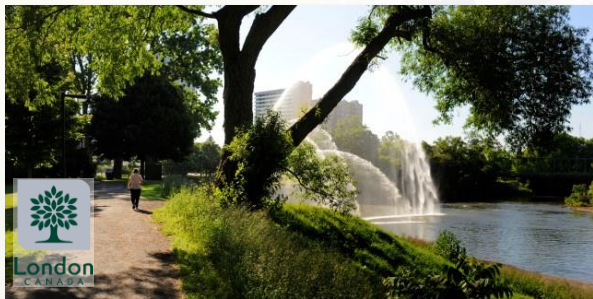


**ONTARIO
WEED
SOCIETY**



CPS-SORA

Canadian Phytopathological Society
Southwestern Ontario Regional
Association



Our next Annual General Meeting will be a joint meeting with three other societies, and will be hosted at the Four Points Sheraton in London.

Check the [ESO website](#) for more details soon!

London hosted our 6th annual Bug Day at the London Children's Museum, and we had over 700 guests in attendance! We had some of our usual stations, including edible insects, how to ID an insect, a honeybee observation hive, live insect zoo with critters from around London, and the fan favourite: cockroach races. We also had a few new stations including DIY bee-making station, a biodiversity gardening hub with customized Heeman's (a local garden centre) native wildflower seed packets, and an Entomofarms recipe card hub for guests to take home their very own insect-y recipes. Overall it was one of our best years, and we can't wait to keep up the momentum for Bug Day 2020! Special thanks to Entomofarms for donating snack samples, and Nature London for their continued support and donation.

- Jackie Lebenzon



Guelph Bug Day: A recap on the importance of public outreach events for entomology

Insects represent a large portion of the world's biodiversity, with approximately 80% of the total species on earth being insects. They are important in every ecosystem on Earth and play a critical role in climate change, human health, agriculture, and global development. Despite their importance, they are understudied and underrepresented. As entomologists, we must continue to advocate the importance of entomological research as a means of understanding the insects we live with everyday. As such, public outreach events like Guelph Bug Day must continue to be funded to promote and support entomology. Started in 2017 by Matt Muzzatti and Sarah Dolson, Guelph Bug Day had become a staple event for many families from Guelph and beyond. This annual, one-day event is organized and run by graduate students of the University of Guelph. Targeted at families and students, but attracting a diverse community of insect enthusiasts, Guelph Bug Day aims to instill a love, curiosity, and appreciation of our six-legged friends in hopes of inspiring the next generation of budding entomologists.



Families enjoying some interactive education booths

Members of the University of Guelph Insect collection talking to participants

The 3rd Annual Guelph Bug Day was held on Sunday August 25th at the University of Guelph's Arboretum Center and had an attendance of just over 1200 participants. I had the pleasure of continuing Matt and Sarah's vision of Guelph Bug Day this year as a Co-Chair with Cassie Russell. I couldn't have been more thrilled to have had the opportunity to expand on the already successful event, and to share my love of entomology with the public with my colleagues. Guelph Bug Day encourages those who attend to explore and interact with the exciting world of insects through a variety of activities and educational booths. Educational booths were hosted by organizations such as the CFIA, Let's Talk Science, the Arboretum, and Nature Guelph, while the interactive activities included guided insect hikes, tours of the Honey Bee Research Centre, live insects (both exotic and local), an insect-themed obstacle course, and a hands-on aquatic insect pool. This year we also displayed posters featuring the research activities of entomology labs at the university, and we held an 'introduction to pinning insects' workshop.



Education booth volunteers sharing their knowledge with attendees

In addition to educating the public about insects, Bug Day also allowed student volunteers the opportunity to develop their public speaking and communication skills, which are critical to success as a graduate student and researcher. Graduate students engaged with the public to support knowledge translation and transfer and encourage scientific literacy within the community. Undergraduate volunteers gained critical skills to encourage their future in science, research, and outreach. They also made valuable connections and contacts with the passionate entomologists and insect enthusiasts that our event attracted.



Volunteers for educational tables getting set up



Cockroach Races are always a hit with the kids

With so much entomological research still to be done and so many insect species still to be discovered, we must continue to encourage new generations to be involved in entomology. Outreach events like Guelph Bug Day are not only important for sharing the importance of entomology with the public, but they also are important for training the next generation of entomologists to become advocates and outreach professionals for our field of study. The continued support of outreach programs like Guelph Bug Day from entomological societies, universities, colleges, and communities is incredibly important if we are to continue to inspire the next generations of citizen scientists, entomologists, and researchers.

Well, that's all folks, Guelph Bug Day has come and gone, and I can't believe that it's all over until next year. A special thanks to my Co-Chair Cassie, all the volunteers, team and booth leads, vendors, the Ontario Agricultural College (Richards Learning Trust), the University of Guelph Arboretum, the School of Environmental Sciences, and the Entomological Society of Ontario for making this day possible. See you all next year and remember to stay buggy.

- Dillon Brian Muldoon



Volunteers gathering a group of families for kid's hike to search for insects in the Arboretum



New: interactive beginners pinning workshop & posters of insect laboratory groups at the University of Guelph

[Twitter](#)



[Facebook](#)



[Instagram](#)



The Lupine Leaf-roller Moth Rediscovered in Ontario by Naturalists after 116 years

Gard W. Otis (gotis@uoguelph.ca)

School of Environmental Sciences, University of Guelph.

In early June of 1900, Allan Kinghorn, a 20-year-old insect enthusiast in Toronto, encountered moth larvae at High Park “in considerable numbers among leaves of *Lupinus perennis*” (Busck 1901), the wild lupine or sundial lupine endemic to sandy regions of southern Ontario. Kinghorn sent several larvae on lupine cuttings to Dr. James Fletcher, the Dominion Entomologist and Botanist attached to the [Central Experimental Farm](#) and founder of what was to become the Canadian National Collection of Insects, Arachnids, and Nematodes (CNC) in Ottawa. Fletcher successfully reared eight adult moths, all females (Busck 1901). He sent three of them to August Busck, a noted microlepidopterist of the Bureau of Entomology of the US Department of Agriculture, who described them the following year as a new species, *Anacamptis lupinella*. Those were the only specimens of the lupine leaf-roller moth collected in Canada until recently.

The story picks up again in 2016 when David Beadle and Richard Aaron checked the fairly small lupine population in High Park, Toronto, for moths. On July 6th, their very first sweep through lupines yielded moths that matched the description of *A. lupinella*! These were the first individuals of that species observed in Ontario since the original collections by Kinghorn more than a century earlier. In total, Beadle and Aaron captured and photographed four individuals that exhibited the full range in colouration known for the species (Fig. 1). Two years later, on 18 July 2018, Richard, David, Taylor Leedahl, and Ken Sproule spent several hours sampling all of the lupine patches in High Park. They netted, photographed, and released ~50 moths likely to be *A. lupinella*.



Figure 1. Photographs of *Anacamptis lupinella* taken by David Beadle on 6 July, 2016, the day he rediscovered the “lupine moth” in High Park, Toronto. The variability in the transverse white band was noted by Busck (1901) in his original description of the species.

The Lupine Leaf-roller Moth Rediscovered in Ontario by Naturalists after 116 years

In late May 2017, Mary Gartshore, Peter Carson, Jessica Linton, and I were checking lupines at the St. Williams Conservation Reserve, Norfolk County, when we noticed abundant moth larvae on the plants. Each larva had webbed together 2-3 lobes of a leaf. Being aware of the discovery of the lupine moth in Toronto, Mary returned on 1 July and observed many adult moths. After quickly obtaining a collecting permit, she conducted 200 back and forth sweeps over lupine plants on 6 July and caught 181 adult moths as they walked up the sides of the net and escaped! She collected several for species confirmation. Following the discoveries in Toronto and Norfolk County, Mary encouraged Ken Stead to search for lupine leaf-roller moths near Pinery Provincial Park. That region of Lambton County historically harboured extensive oak savanna habitat with large populations of wild lupines. On 9 July, 2018, Ken confirmed moths in lupines at the Karner Blue Sanctuary, Port Franks, and a site bordering the park.

Several specimens from Norfolk County and Port Franks were deposited in the Canadian National Collection, Ottawa, and were examined by Dr. Jean-François Landry. Dr. Landry compared the specimens collected by Mary and Ken to the original “lupine moth” specimens, to related *Anacamptis* species, and to *Aproaerema* species that are similar in appearance. Visually and morphologically, the new specimens match the only remaining specimen from Kinghorn’s original series in the CNC and photos of the type specimen housed in the US National Collection. Additionally, Dr. Jeremy DeWaard of the Centre for Biodiversity Genomics sequenced the “barcode” region of the mitochondrial genome of both recent and historical specimens. Genetically they are very similar, but different from other species of *Anacamptis*. Based on the visual and genetic match between the recent and historical specimens collected at High Park, and the distinctiveness of *A. lupinella* both in appearance and genetically when compared to congeneric species from Ontario, Jean-François and Jeremy confirmed that the recent discoveries truly are of “lupine leaf-roller moths”, *Anacamptis lupinella*.

Our rediscovery of the lupine moth highlights our imperfect knowledge of the moth fauna of Ontario. Serious non-professional lepidopterists regularly make important observations and discoveries. We hope our discoveries described here will spur others to contribute to the natural history of moths and other insects in the province.

A more detailed manuscript on [A. lupinella](#) has been submitted to the Journal of the Entomological Society of Ontario.

Busck, A. 1901. A new Canadian Tineid. *Canadian Entomologist* **33**: [14](#)-15.

National Outdoor Book Awards (NOBA) 2019

WINNER (category: Nature Guidebooks)

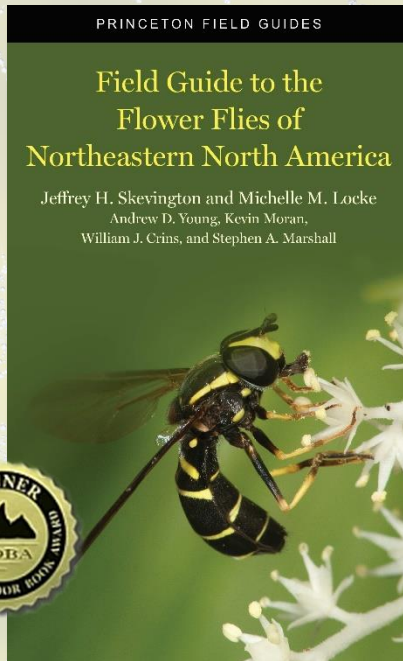
Field Guide to the Flower Flies of Northeastern North America

by Jeff Skevington, Michelle Locke, with coauthors Andrew Young, Kevin Moran, William Crins, and Steve Marshall.

NOBA writes:

"First things first: flower flies or hover flies are not bees or wasps. Yes, they are pollinators, and yes, they have similar markings to bees — which serves them well as a form of protection from potential predators — but that's where the similarity ends. They have two wings. Bees and wasps have four. Moreover, flower flies haven't had the sort of guidebook attention that bees have had. Until, that is, the arrival of this book, the first comprehensive guide to flower flies. With plenty of photographs, a smart lay-out, and clear textual material, it does the job and does it well."

Big congratulations to these Ontario entomologists (which includes many past and current ESO members)! Make sure to pick up a copy!
You can read more about the awards [here](#).



BLOODSUCKERS

— LEGENDS TO LEECHES —



WILDLIFE PHOTOGRAPHER OF THE YEAR



Image: 'Face of deception' by Ripan Biswas, India. Winner 2019, in the category Animal Portraits. Ant-mimicking crab spider from the Buza Tiger Reserve in West Bangal.



Special Offer

Save 15% off admission. Buy your tickets online at www.rom.on.ca and enter promo code: **ESO**

Bloodsuckers: Legends to Leeches

On view through March 22, 2020

Quench a thirst you didn't even know you had in *Bloodsuckers: Legends to Leeches*, a ROM original exhibition where nature and culture truly collide. [Find out more](#)

Wildlife Photographer of the Year

On view through March 29, 2020

All-new photographs from around the world reveal striking wildlife, breathtaking landscapes, and the remarkable beauty of our natural world. [Find out more](#)

ROM Wildlife Photographer of the Year Contest

Contest closes February 23, 2020

The ROM invites you to share your captivating images of the natural world for a chance to win some amazing prizes including a [trip](#) for two to Halifax courtesy of Porter Escapes, a Digital SLR camera courtesy of Henry's Camera, and more! Share your wildlife image from your unlocked Twitter or Instagram account and include @ROMtoronto & #ROMwpyON (or #ROMwpyJR for ages 13-17). [Find out more](#)



TEA Member Meetings

Saturday, January 25, 2020. 1:15 pm. Room 206 Victoria College
TOPIC ON BEES (TBA) - *Miriam Richards, Brock University*

Saturday, February 22, 2020. 1:15 pm. Room 206 Victoria College
TOPIC TBA - *Speaker TBA*

Saturday, March 28, 2020. 1:00 pm.
Room 432, Ramsay Wright Laboratories, University of Toronto, 25 Harbord Street
STUDENT SYMPOSIUM

Saturday, *tentatively April 18*, 2020. 1:00 pm.
361A Old Finch Avenue, Toronto (Toronto Zoo Administration Building)
TEA BUG-REARING DAY

TEA Student Symposium 2020

Every year in March, TEA holds a Student Symposium at the Ramsay Wright Zoological Building at the University of Toronto. The next symposium will be Saturday, March 28, 2020. Graduate students, senior undergraduates and postdoctoral fellows are eligible to present either a talk or a poster. Everyone is welcome to attend. The audience is a good mix of professional and amateur entomologists who provide a large forum for the students. **Deadline** for application to participate at the next symposium will be in early March.

Students interested in participating should contact Doug Currie, academic co-ordinator of the symposium at dc.currie@utoronto.ca with a provisional title. We aim for 6 talks and 10 posters and would like to cover a broad range of topics. Slots for the talks often fill up quickly! Talks will be limited to 12 minutes plus 3 minutes for questions. Posters must be of reasonable size - 3 to 4 feet - and be capable of being attached to the walls without damaging them. Abstracts of the talks and posters (250 words) will be published in the TEA newsletter *Ontario Insects*.



Drawing by David Beresford

GRADUATE STUDENT POSITIONS

MSc Student – Mosquito and tick vectors of infectious disease

Brandon University (Brandon, MB)

Application deadline: Open until filled; Start: Spring 2020 preferred. [Details here](#)

MSc Student – Tritrophic effects of supplemental LED lighting in greenhouse vegetables

Laval University (Quebec City, QC) and Agriculture and Agri-Food Canada (Agassiz, BC)

Application deadline: Until a suitable applicant is found; Start date: 1 January 2020. [Details here](#)

MSc Student - Insect Behavioural Ecology

Agriculture and Agri-Food Canada (British Columbia)

Application deadline: 20 December 2019. [Details here](#)

Multiple MSc or PhD Students - Biovigilance for sustainability of vegetable production in muck soil

Agriculture and Agri-Food Canada (Saint-Jean-sur-Richelieu, QC)

Start date: As soon as possible. No later than Fall 2020. [Details here](#)

For more postings, visit the [ESC-SEC opportunities](#) and [ESA careers](#) pages.



Drawing by David Beresford

JOB POSTINGS

Assistant Professor of Insect Physiology

Washington State University

Application deadline: Application reviews begin on 2 January 2020. [Details here](#)

Assistant Professor – Evolutionary Biologist

University of Texas at El Paso. Anticipated start: Fall 2020 or earlier. [Details here](#)

Forestry and Horticulture Survey Student - Insect pests and diseases (summer position)

Canadian Food Inspection Agency (St. Catharines / Hamilton / Toronto)

Application Deadline: 2 January 2020.

*Preference for 2nd year students focusing on botany, entomology, horticulture, agriculture, or environmental biology, and those with experience in field work.

For more details please email [Steven Cecchini](#)

Regulatory Portfolio Manager

Syngenta (Guelph, Ontario)

Closing Date: N/A. [Details here](#)

*Requires B.Sc. in chemistry, toxicology or an agriculturally related biological science such as entomology, plant pathology, soil science or weed science. At least 7 years of experience in a regulatory capacity.

For more postings, visit the [ESC-SEC opportunities](#) and [ESA careers](#) pages.



Kaitlyn Fleming (webmaster 2019-)



The ESO welcomes Kaitlyn Fleming as the new webmaster! Kaitlyn is a PhD candidate at Trent University where she researches Entomology and Biogeography. Kaitlyn is also currently serving as an ESO Student Representative! Thanks and welcome aboard!

We would like to extend a **huge thank you** to Trevor Burt, ESO webmaster from 2013-2019. Trevor designed the current ESO website (ain't it a beaut?!).



Trevor Burt (webmaster 2013-2019)

JOIN THE ESO BOARD!

The ESO society functions thanks to the help of the board! There are many different positions, and joining is a great way to make a difference to the society, work in a team, and gain public service experience in a relaxed, friendly atmosphere. Within the board you will also get the opportunity to join various committees for outreach, meeting planning, and more. Perhaps you have some new ideas or expertise that you'd like to bring to the society!

Each summer, the ESO members elect an incoming president, director, and student representative. The duration of these positions is as follows:

- President: 3 years (incoming, current, outgoing)

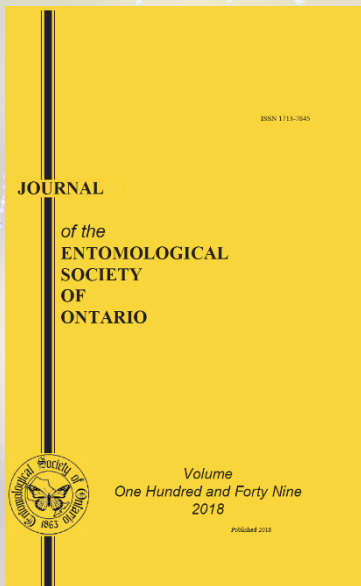
- Director: 2 years

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